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Endemics & Epidemics

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Vanhoy

An Essay
On
Endemics and Epidemics

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In complying with the regulations of this University, I find myself at a loss in the selection of a proper subject to lay before those whose enlightend minds, would enable them to detect at a single glance, the numerous errors into which I might fall. My difficulty on this head is greatly increased, in consideration of most subjects having been already treated by abler pens. Conscious of my inability, while only in the threshold of my professional studies, to add any thing new to the existing stock of medical science, I shall merely give a brief, and imperfect account of some of those diseases which have invaded the place of my nativity, since I commenced the study of medicine. In order to do this, it may not be considered altogether foreign to the subject, to sketch a topographical view of the country; after which I shall consider the diseases under the division of Endemics and Epidemics.

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Kent County in the State of Delaware is a narrow portion of land, gradually rising from the circumference towards the centre. It is bounded on the East by the Bay of Delaware, and on the West by the State of Maryland. On the East side is situated a considerable tract of marshy country, a part of which is subject to be overflown by the tide water, and after several days of Eastwardly winds the whole marsh is entirely inundated, and when the body of water recedes, large ponds are left behind which becomes stagnant, and offensive to the smell. On the West side is an extensive forest, the land of which is very low, so that for two or three months in the year, it also, is irregularly covered with water. The excessive Heats of summer and autumn, hasten the putrefactive process in those ponds. From this source, copious exhalations take place, in consequence of which, the country is peculiarly liable to the Bilious Fever, in all its forms

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Fever, and endeavour to give a view of the treatment best adapted to that, the disease, in the tract of country already described

of Intermitting Fever

This is one of the most common forms of disease, with which Physicians have to contend, in the county of Kent, and although the treatment may be tolerably well understood, there is still ample room for improvement. Intermitting Fever has been generally divided into three kinds, Tertian, Quartan, and Quotidian, and these sub-divided again, into double Tertian &c. As they are all, however to be considered as variations of the same disease, produced by the same causes, and cured by the same remedies, I shall speak of them collectively, otherwise this Essay would be necessarily extended to an inordinate length.

of the Symptoms

A regular Paroxysm of Intermittent Fever has been divided into the cold, the Hot, and the sweating stages.

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The first generally commences with stretching, yawing, and an unconquerable thirst for cold water, and acids; which being indulged in, produces for the most part, nausea and vomiting. A paleness and shrinking of the features occur, with coldness of the hands and feet, the whole surface of the body appears to contract, the skin becomes rough as in cold weather, the patient experiences a great tremour, the Eyes are dull and heavy, a disposition to approach the fire becomes almost irresistable, while those parts only feel warm that are nearly in contact with it, the other parts of the body remains as cold as ever. From this situation it is with the greatest reluctance the patient will consent to be removed. One of those Paroxysms continues from thirty minutes, to three or four hours, after which a warmth gradually returns over the whole body. The Heat generally commences in those parts which it first forsook, and, although not fully able to explain this fact, yet, in consequence of experiencing it my self, I have been induced to enquire of others, and found it to be commonly

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the case. At the return of Heat, there is a flushing of the face, accompanied with Coma, delirium, or vomiting of Bilious matter; the pulse is small and frequent, and sometimes scarcely perceptable. But after preternatural Heat pervade the whole body, the pulse becomes more full, strong and hard, the patient respires with more ease, the skin becomes smooth, but remarkably Hot; the tongue is covered with a white scurf, an a excessive throbing of the temporal artery is experienced, the Urine becomes very high coloured, and, after the paroxysm deposits a lateritious sediment, a moisture commences on the face and breast, and the nausea begins to abate, which soon terminates altogether, and is followed in a short time by a close of the Paroxysm. The functions now approach their natural state, but the patient is left in a debilitated condition, in consequence of the preternatural excitement his system has undergone, and is more easily fatigued between the paroxysms, than when in full health; while the slightest exertions produces profuse perspiration.

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The causes of Intermitting Fever are various, being what ever tends to debilitate the system, such as a warm and moist, or a cold, and damp atmosphere, the variations of the season, as spring and Autumn &c. The occasional causes are miasmata, to which have been added contagion, and Lunar influence.

In the Prognosis of Intermitting Fever, authors have considered the regular and mild Paroxysm, as a circumstance of favourable omen. This I have never observed as a general rule, but, on the contrary I have often known such cases when left to themselves, to prove tedious and obstinate, oftentimes assuming an aspect more unfavourable than that of a common Intermittent. A Hemorrhage from the nose during the paroxysm, and eruptions about the mouth, nose, and Ears, accompanied with a swelled up, a lateritious sedament deposited by the Urine, are generally favourable symptoms. But when respiration becomes

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difficult, attended with great anxiety, coma, delerium, hiccough, diseased Tonsils, abdomen tumid, hard and very painfull to the touch, accompanied with obstinate costiveness, fetid breath, pains in the Hypochondric, or Epigastric, regions and great debility, these are symptoms of an alarming character. Intermittents are frequently followed by obstructions in several of the Viscera, particularly the liver, and spleen, and unless medical aid interpose for the relief of the patient, are succeeded by dropsy, dissentery, Jaundice, or some form of inflamatory disease.

In the treatment of Intermitting fever, we are to endeavour in the intermission to counteract the predisposition to an other paroxysm, under which the system labours; and, in the exacerbation to shorten the different stages, and obtain a compleat solution of the disease. In those Intermittents which have fallen under my notice, it has always been requisite to use depletion in the first instance, and in no case whatever have I seen

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Bloodletting is indicated when the pulse is full, and tense, or slow and corded, accompanied with a pain in the Head or side, and a very dry and hot skin. The remedy tends to bring on a gentle diaphoresis, releives the patient of those acute pains and imaginary phantoms which so much disturb his mind

Of Emetics

This remedy has been administered with advantage, when the patient has laboured under difficult respiration, a fetid breath, or sickness at stomach without being able to get relief by spontaneous vomiting. The Emetics most used and benificial in this disease, are sulphate of Zinc, Ipecacuanha, and Tartarized Antimony. In a majority of cases this last medicine appears to be far preferable, not only because it remains longer

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in the stomach, and has greater power of cleansing it; but, because it also depletes more certainly and to a greater extent

Of cathartics

In this form of disease, cathartics have been used with great advantage, in as much as they tend to regulate the system and prepare it for the admission of other medicines. I shall only mention some of the principle cathartics, as a catalogue of all that are frequently exhibited in Intermiting fever, would rather swell this Essay than add to its importance. When a patient is in a costive state with pains in his bowels, tenseness of the abdomen and difficulty of making water, we are warranted in prescribing a purge, such as the sulphate of soda, Jallap, or Rhubarb, but in general, calomel combined with the Podophyllum Peltatum, appears more peculiarly adapted to this disease, than any purgative with which we are acquainted. It answers best when given at bed time, in such quantity as may not

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operate before morning.* After the bowels have been suffi-
iently opened, and the febrile action subdued or suspended, the
patient should commence the use of the Bark, in as large quan-
tities as the stomach will conveniently bear. From one,
two, or three, drachms, of this remedy may be administered
every hour during the intermission, but as soon as the
pulse begins to increase, or as the exacerbation threatens, it
ought to be suspended. Before the cold stage commences
the patient should be in bed, as the coldness of the bedclothes
usually increase the chill, in case he retires after the comm-
encement of it. Should the Bark nauseate, it may have
½ oz of sugar grated over it, and be given in Milk, coffee, wine,
or what ever may be best adapted to the state of the stomach.

The next best mode of taking the Bark is, perhaps in
the form of Huxhams Tincture, exhibited in large doses.
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costiveness, some gentle laxative may be combined with it, or the bowels may be opened by a glyster, or a mild purge. On the contrary, should a diarrhœa supervene, a few drops of Laudanum may be added.

The Cornus Florida, and Prunus Virginiana, appears to be very good substitutes for Peruvian Bark, and are certainly entitled to the attention of Practitioners. They are to be met with in almost every part of the United States, and in most cases will answer the purpose of the cinchona.

Arsenic, has been used with great advantage in this disease. This active remedy should always be given in combination with opium. As Physicians are so much divided, with respect to the time of giving this medicine, I shall briefly notice the manner in which I saw it exhibited to six persons who were labouring under Intermittents at the same time. The arsenic was prepared in pills of one sixteenth of a grain

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and one fifth of a grain of opium. The pills were given in such a manner that two of the patients should take them in the cold stage, two during the intermission, and two at certain specified hours in the day. The patients soon recovered their former state of health, and I was not able to give a preference to any of the above modes of administering the medicine. Arsenic may be given in the form of the Mineral Elixer, which on some accounts is preferable to the solid form, as patients are not so apt to suspect they are taking medicine of so poisonous a nature.

At the commencement of the cold stage, the patient should take thirty or forty drops of Laudanum, which may be combined with as many of Spirit of Hartshorn. Should this last medicine be disagreeable, the Laudanum may be mixed with spirit of Lavender and droped on loaf sugar. The cordial effects of this medicine is quickly perceived; for while the Laudanum acts on the nervous, and muscular

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systems, by deadning the irritability, the lavender assumes a centrifugal direction, and soon brings on a free perspiration. Great care is required during the paroxysm, that the patients drinks be warm.

The foregoing simple directions have been usually adequate to the removal of the Intermittents of Kent County

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Of Epidemics

The fatal effects of Epidemics have been experienced in all countries, from the earliest stages of society down to the present day, and, not confined to mankind alone, these diseases have with equal potency attached both the animal and vegetable Kingdoms, so diversified is their character, and so extensive their ravages. The depopulation of Villages, Cities, and even whole tracts of Country, evince but too forcibly the truth of this assertion.

In the year of 1804 a Mill-dam in the vacinity of Dover, was broken down, which partially drained the pond of its water. A species of rock which grew in the pond in great abundance, soon died; the water was covered with a green pellicle, thousands of fish fell victims to its impurity and floated on its surface. On the approach of spectators, they were saluted by a fetid odour similar to putrifactive animal matter, combined with that of filthy gutters, in the streets of Cities. In the latter end of August a bilious fever prevailed in the Town of Dover, which proved mortal to eight-tenths of all the children that were under ten years of age. I scarcely need add, that the probable cause was effluvia from the stagnant water of the Mill pond

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The diversity of the disease appears still further, not only in the peculiarity of its symptoms, but from the different modes of treatment which it requires; for we are under the necessity of studying not only the peculiar character of the diseases of different years, but of those of the same year, the same month, and even the same day. Medical writers are of opinion that this does not occur more from the different seasons of the year, than from various constitutions of different years.

Whether Epidemics follow each other in a certain rotine or order of progression, is a point which has not been ascertained by the most accurate observers; but from the irregularity of seasons, the dissimilar modes of living as practised by man, we are inclined to believe that those diseases are without any regular periods of recurrence, being governed in a great measure, by the qualities of the air, and influenced also, by cleanliness, regularity, and correctness in diet. Another argument to the same effect

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es derived from the different modes of treatment which are requisite in different years; the lancet being sometimes to be depended on as the only sure guide to success, at another time Tonics and stimulants, and again Emetics, and cathartics. These last medicines may be considered as holding an intermediate grade between the lancet and stimulants, so that agreeably to the type and character of the disease, mild or powerfull remedies are to be employed

Epidemics are sometimes uniform in all their symptoms notwithstanding diversities in the age or constitution of patients; these diseases attain their zenith with great regularity, and decline again by a retrograde motion, equally uniform

Some Epidemics appear to be dependant on hot or cold, moist or dry weather, or winds blowing a long time from one quarter, or from a deficiency of wind; while they are at

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other times independant of all these remote causes. Here I may quote the words of the Illustrious Sydenham, that "some secrete inexplicable change may be going on in the bowels of the Earth, that may produce some secrete exhalation, so as to impregnate the atmosphere, and subject the human body to such disease as long as that kind of constitution prevails, which after a certain length of time may give way to a new action and new species of disease."

Epidemics have been considered as of two kinds, Vernal, and autumnal; and although they sometimes vary from these exact limits, they are to be considered as under the influence of either spring or autumn, accordingly as they approximate the one or the other. For the variations of seasons oftentimes aid so much in producing them, that they commence before their regular period of return, while on the contrary, they may again be so much retarded by a similar cause, as to appear considerably later than their usual time, and that even in

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As Epidemics appearing at the commencement of the year have been thrown into the Vernal class, and those occuring towards the latter end, into the autumnal, so have different kinds been considered as belonging to a particular season of the year, and by some Practitioners treated with as much uniformity, as if the name of a disease were alone requisite to designate the season to which it belonged, and what remedies were suited to its removal. Others have believed that certain diseases only could appear at certain seasons, and that, at those seasons certain medicines only, could be used with advantage. Another class of Practitioners, again prescribe without giving themselves time to inquire into, much less to understand the nature of a disease, the constitution of a patient, or perhaps even the effects which their medicines might produce on the system. Such prescriptions must be (If I may be allowed the expression) a kind of medical salma-

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gunde, a compound of all articles contained in the shops. Practice of this description is highly reprehensible. It is in many instances even more destructive than the tribes of diseases it is intended to eradicate. Happily for america, the University of Pennsylvania have relieved the people in some degree from the evils of Empericism, although it is yet to be lamented that there are in the United States, not a few pratitioners of influence and standing, whose pratice is worthy of the epithet Empirical.

I shall briefly notice one more link of the fatal chain, which is dragging hundreds of victims to the grave, and the strength of which is such, that it will, probably be long before it is severed. I allude to the practice of prescribing for patients as if labouring under two arterial diseases at the same time, and compelling them to use medicines, the properties of which are essentially different. We frequently see Physicians fearful of giving medicine in one disease lest it might prove detrimental to another, and thus between

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timidity, caution and Ignorance, leaving their unfortunate patients to die. I have possessed a personal acquaintance with three individuals who fell sacrifices to this reprehensible mode of practice.

Acute diseases may be compared to the Ebing and flowing of the tide: they are never stationary, but incessantly either increasing or diminishing; and with as much propriety might Physicians contend, that hot and cold water, could be contained in the same vessel without mingling and acquiring a common temperature, as that two arterial diseases exist in the system at the same time, without uniting, or one of them gaining the ascendancy over the other.

Having taken a cursory view of Epidemics in general, I shall now proceed to make a few observations on an Epidemic which occured in the fall of eighteen hundred and

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eleven, raging with great mortality to hundreds. In the month of September a Jaundice appeared in Smyrna and its vicinity, which, though mild in its commencement soon spread with alarming velocity, attacking both sexes, and all ages. In less than two weeks its malignant effects were experienced at Dover, and the surrounding country. At the commencement of the disease, three or four were attacked each day, but the evil soon increased to such an extent, that twenty or thirty were daily visited by it. Physicians were disposed to treat this disease in the manner usually directed by authors; but they soon found that the lancet must be their only, at least their chief, dependance.

In the absence of my preceptor, on the twentieth of the month, I visited a gentleman in the country, about forty-five years of age, and who had been confined about ten days; when I entered the room, I found him discharging from his stomach

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black matter, which very much resembled coffee grounds; his eyes were very red and much swelled, his pulse small, but somewhat frequent, his extremities were cold, his respiration difficult, and his skin of a dark yellow or livid colour. On inquiry I learnt that he was taken with a pain in his head, attended with sick stomach, and that a Physician of eminence belonging to the neighbourhood had been consulted, who informed them that the Gentlemans disease was Jaundice, and the pain in his head, was merely sympathetic, which would yield to an Emetic; accordingly one had been given, but by its operation the patient was by no means benefited; on the following day a second Emetic was given about 8 o'clock in the morning, and continued to operate when I arrived at the place, which happened about four hours after it had been taken. Hesitating at first what to do in the absence of the attending Physician, but, from the entreaties of the patient and his family, taken in

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conjunction with the urgent danger of the case, I relinquished my simples, from a sense of paramount duty. My first efforts were to check the vomiting, for which purpose I gave 60 drops of Laudanum, applied a cataplasm to the umbilical region, Blisters to the ancles and wrists, and bottles of hot water to the soles of his feet. I then gave my patient a mixture of laudanum and spirit of lavender 30 drops of each, and afterwards an anadyne injection. But finding all my efforts baffled, (the vomiting remaining) I determined on opening a vein, and after taking ℥ij of blood, the pulse become more full, which induced me to take ℥ij more, when I had the pleasure of seeing the vomiting stopt, the patients respiration more free, the warmth returning to his extremities, and his case in all respects much more promising. Next morning, at my return, I found him again vomiting black matter, his attending Physician had visited him, and declared that his stomach was loaded with bilious matter

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which must be discharged by an Emetic. While the patient was remonstrating against taking it, a spontaneous vomiting came on, which produced all the alarming symptoms of the day before. On taking about ℥viij of blood the vomiting ceased again immediately. I then directed some lime-water to be prepared and taken in combination with milk, the diet to be composed of light articles such as chicken water, rice milk, wine whey &c. The patient was bled twice a day for eight days, when at length recovered his usual health.

Two Brothers were seized with the disease, on the same day in the Town of Smyrna, one of them applied for medical aid in that place, and his disease was treated by Emetics, soporacious medicines, exercise on horse-back &c, but he died on the fifth day. The other was sent immediately to Dover, to the care of my Preceptor. The patient was put

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on a mercurial course, and took every night one or two grains of opium. His gumms were not touched by the calomel untill the twelfth day, in the space of which time he had lost one hundred and sixty ounces of blood. This patient happily recovered

I might notice a number of cases calculated to prove that this disease was to be conquered only by the lancet. But as time is wanting for the purpose, I must close this very imperfect dissertation, by tendering to the professors of the University of Pennsylvania, my greatefull acknowledgements for the important advantages derived from their lectures, and sincerely wishing them a long and happy continuance of their labours, for the benefit of mankind